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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
BURKHART, ELIZABETH A

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1762	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/516,448	Applicant(s) WARD, LUKE	
	Examiner Elizabeth Burkhart	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-31 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-32 are pending in the application. Amended claims 8, 15, and 25 are noted. The amendment dated 16 March 2007 has been entered and carefully considered. In view of said amendment, the objection to claims 15-18 and the rejection of claims 8 and 25 have been withdrawn.

Election/Restrictions

1. Applicant's election of claims 1-31 in the reply filed on 3/16/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3-5, 10, 11, 14, 25, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gitzhofer et al. ('921) in view of Heinecke et al. ('690) for the reasons listed in the previous office action.

4. Claims 1-4, 10, 12, 13, 15, 17-21, 24, and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwin et al. (2004/0022945), referred to herein as Goodwin et al. ('945) in view of Badyal et al. ('950) for the reasons listed in the previous office action.

Goodwin et al ('945) also discloses a method of producing a multilayer coating on a substrate by exposing the substrate to the excited coating forming material repeatedly

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[0020]. Goodwin et al ('945) also discloses that the coating may be post-treated or pre-treated by exposure to an exciting medium [0014].

5. Claims 6, 7, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gitzhofer et al ('921) and Heinecke et al. ('690) in view of Wang ('105) for the reasons listed in the previous office action with respect to Claim 22 and as set forth below regarding Claims 6 and 7.

Regarding Claims 6 and 7, Wang discloses adding oxygen to the atomized material to enhance the oxidation of the material (Col. 5, lines 12-17). The oxygen would also act to carry the material in the direction of the oxygen flow. Therefore it would have been obvious to have added oxygen to the atomized coating material as disclosed by Wang since both Wang and Gitzhofer are concerned with the formation of oxides and one would reasonably expect to achieve enhanced oxidation of the coating material to form said oxides.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

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be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 14 of copending Application No. 10/514661. Although the conflicting claims are not identical, they are not patentably distinct from each other because although they differ in scope, the claims of 10/514661 anticipate the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 6-11, 14, 20-23, and 30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5-8, 11, and 15-22 of copending Application No. 10/514661 in view of Badyal et al. ('950).

Application No. 10/514661 does not disclose in the aforementioned claims that the exciting medium is pulsed.

Badyal et al. ('950) is relied upon as discussed in the 35 USC 103 rejections above.

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to use the claimed method of Application No. 10/514661 wherein the exciting medium is pulsed as suggested by Badyal et al. ('950) in order to achieve a greater level of structural retention.

This is a provisional obviousness-type double patenting rejection.

Allowable Subject Matter

8. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The relevant prior art does not disclose forming a multilayer coating wherein the nature of the exciting medium is changed during the coating formation (i.e. pulsed plasma to pulsed UV). The relevant prior art states that for a multilayer coating multiple plasma chambers may be used, but not the use of a plasma chamber followed by a UV or electron beam chamber.

Response to Arguments

9. Applicant's arguments, see p. 11, par. 4 and 5, filed 3/16/2007, with respect to the rejection(s) of claim(s) 6 and 7 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Wang.

Wang discloses adding oxygen to the atomized material to enhance the oxidation of the material (Col. 5, lines 12-17). The oxygen would also act to carry the material in the direction of the oxygen flow.

10. Applicant's arguments filed 3/16/2007 have been fully considered but they are not persuasive.

11. In response to applicant's argument that there is no suggestion to combine the references of Gitzhofer and Heinecke, the examiner recognizes that obviousness can

only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, applicant argues that Gitzhofer would not be concerned with depositing inorganic coatings onto a heat sensitive substrate and therefore, there would be no motivation to incorporate a pulsed plasma into the process of Gitzhofer.

The examiner disagrees. Heinecke discloses a pulsed plasma process in order to form good inorganic coatings onto a heat-sensitive substrate such as plastics. Gitzhofer discloses a continuous plasma process to deposit bioceramic materials (inorganic materials used for implants) onto a substrate. Gitzhofer does not disclose the substrate material, so it would have been within the ordinary skill in the art to incorporate the pulsed plasma process of Heinecke into the process of Gitzhofer when using a heat-sensitive substrate material, such as if one wanted to produce a lighter weight implant.

12. In response to applicant's argument that there is no suggestion to combine the references of Goodwin and Badyal, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case,

applicant argues that reasons have not been provided that the skilled artisan would modify Goodwin to include the pulsed plasma claim limitation of Badyal.

The examiner disagrees. Badyal discloses that a greater level of structural retention of the coating is attributed to free polymerization occurring during the duty off-cycle time, which would imply that for said free polymerization to occur, the plasma must be pulsed in order for there to be a duty off-cycle time. The coatings with this greater level of structural retention exhibit excellent water and oil repellency. Applicant posed the question "why would the reason to modify Goodwin to have a pulsed plasma be to produce coatings exhibiting excellent water and oil repellency?" Goodwin discloses that preferred uses for the coatings include a moisture barrier for food packaging [0021], thus Goodwin would be concerned with having excellent water repellency and by incorporating a pulsed plasma as suggested by Badyal a greater level of structural retention could be attained which would produce coatings with excellent water repellency.

13. Applicant argues that Goodwin and Badyal, taken singly or in combination, do not teach or suggest "that the exciting medium is created by a pulsed flux of ionized particles or radicals." The examiner disagrees. Goodwin discloses using various types of glow discharge to create the excited medium. A glow discharge is a kind of plasma and plasma is typically an ionized gas. When the pulsed plasma step as suggested by Badyal is incorporated into the process of Goodwin, the means of creating the excited medium would be a pulsed plasma, which would be by definition a pulsed flux of ionized particles.

14. Applicant argues that Goodwin and Badyal, taken singly or in combination, do not teach or suggest "that the coated substrate is subject to derivatization." The examiner disagrees. Goodwin discloses the same coating materials and the same substrate materials as the instant application. The instant application does not offer any reason for the coated substrate being subject to derivatization other than the process of coating these certain substrates with certain coating materials in a pulsed plasma environment. Thus, one skilled in the art would reasonably conclude that when using these coating materials and these substrate materials in a pulsed plasma deposition process, the resulting coated substrate would be subject to derivatization.

15. Applicant argues that Gitzhofer, Heinecke, and Wang, taken singly or in combination, do not teach or suggest "that the atomized coating forming material is deposited via a nebulizer supplied with coating forming material in the form of a liquid or liquid/solid slurry and a carrier gas." The examiner disagrees. Wang discloses in Col. 3, lines 47-51 that an ultrasonic nebulizer is used. Also, Wang discloses that the liquid coating material is contacted with a carrier gas as the liquid is being caused to mist (Col. 4, lines 3-5 and Fig. 1). Thus, Wang would meet the limitation of supplying a liquid and a carrier gas to a nebulizer to form the atomized coating forming material.

16. In response to applicant's argument that there is no suggestion to combine the Gitzhofer and Wang references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one

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of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, applicant argues "that the carrier gas facilitates the formation of plasma and facilitates the movement of the mist to the plasma region" would not provide reasons for the skilled artisan to modify Gitzhofer with Wang.

The examiner disagrees. Gitzhofer discloses that alternative atomizing processes are available other than an atomizing probe (Col. 4, lines 41-42). Wang discloses that a nebulizer is a conventional means of atomizing a solution (Col. 3, lines 40-46). The use of carrier gases to move precursors from one part of a chamber to another is very well known in the art. It would be obvious to one of ordinary skill to modify Gitzhofer by using an alternate atomizing technique in which a carrier gas is used to facilitate the movement of the atomized coating material from the nebulizer to the plasma region. Also, Wang discloses that the carrier gas may be the same as the plasma gas being used, which would facilitate the formation of plasma (Col. 4, lines 20 and 60-65), another advantage to Gitzhofer's plasma process.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Burkhart whose telephone number is (571) 272-6647. The examiner can normally be reached on Monday-Thursday, 7:00 AM-5:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

eab



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